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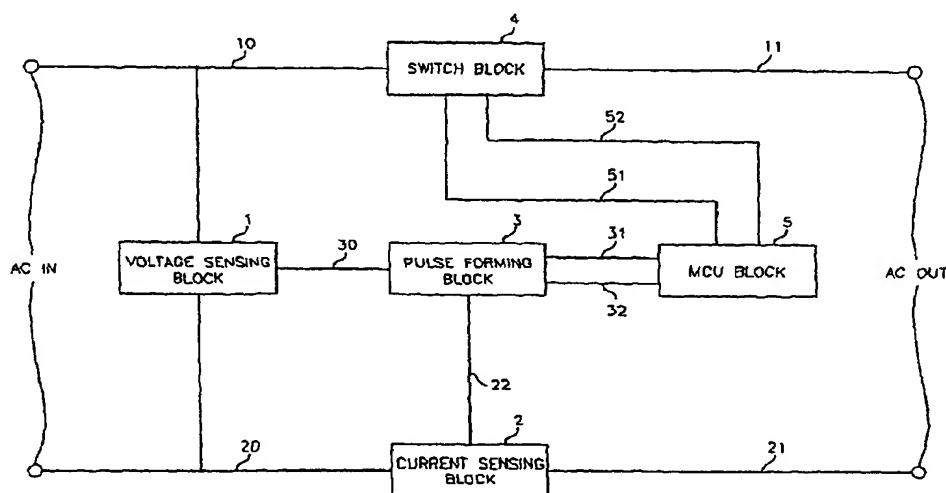
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Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations

[Continued on next page]

(54) Title: **BALLAST PROTECTING DEVICE**



(57) Abstract: A ballast protecting device is connected between an AC input voltage and a ballasted High Intensity Discharge lamp. The device includes a voltage sensing block (1), a current sensing block (2), a pulse forming block (3), a switch block (4) and a micro-controller unit (MCU). The pulse forming block (3) converts positive half cycles of the voltage and current provided by the voltage and current sensing blocks to square wave pulses, and the MCU performs a phase angle comparison between generated pulses. Upon lamp malfunction, ballast current is phase shifted. Current may also be phase shifted when there is a radical change in the input voltage. As a trend of the phase shift between current and voltage is determined by the MCU, a ballast disconnect decision is made, and the MCU actuates the switch block (4) to disconnect the connected ballast and malfunctioning lamp.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

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